AGC/WSDOT Structures Team Members

Feb. 12, 2004

Attendees:	Company	Phone	E-mail
Ayers Scott	Wilder Const.	425-508-3246	scottaye@wilderconstruction.com
Barney Millard	Conc. Tech.	253-383-3545	mbarney@concretetech.com
Becher Dave	WSDOT-NWR	425-649-4429	becherd@wsdot.wa.gov
Foster Marco	WSDOT-NWR	360-757-5991	fosterm@wsdot.wa.gov
Hilmes Bob	WSDOT-ER	509-324-6232	hilmesb@wsdot.wa.gov
Kapur Jugesh	WSDOT_HQ	360-705-7209	kapurju@wsdot.wa.gov
Leachman Dan	Kiewit Const.	425-255-8333	dLeachman@kiewit-PBD.com
Olson Ryan	Mowat Const.	425-398-0205	ryanolson@mowatco.com
Owings Don	WSDOT-SWR	360-905-1501	owingsd@wsdot.wa.gov
Quigg John	Quigg Bros.	360-533-1530	johnq@quiggbros.com
Sheikhizadeh M.	WSDOT-HQ	360-705-7828	sheikhm@wsdot.wa.gov
Swenson Robb	General Const.	360-394-1407	Robb.Swenson@kiewit.com

The meeting began at 9:00 AM. Mo introduced Jim Schettler of Jacobs Civil attending the meeting. No changes to the Jan. 04 meeting notes were suggested.

Steel Price Escalation

The Contractors expressed some concern about the recent sharp rise in steel prices. Highlight of the reasons for price escalation:

- Two mills have gone bankrupt
- China is importing large amounts of scrap steel
- Some hording is starting to happen
- Availability of the steel is becoming a problem
- Price commitments are good for only two weeks
- Reinforcing bar prices have gone up as much as 20% per month

The Contractors are currently estimating the steel price escalation for bidding contracts.

Action Plan: The contractors request that escalation clause be added to all contracts.

Alternate Stirrup Details for Prestressed Girders

Jugesh handed out four different alternate girder stirrup details, in addition to the current practice, for the prestressed girders. Highlights of ensuing discussions:

- The current safety concerns with the stirrup at the job site can simply be addressed with placing a board on top of stirrups
- Placement of additional ties in the field is a concern. It creates a lot of field placement work.
- The stirrup loop option is the best option
- Don't use it
- Tobin wrote "changing the girder stirrup to a closed loop is a great idea." The closed loop is being practiced by States of AZ, NM, & TX. Make the change.

Action Plan: Seek feedback from ironworkers at the next meeting

Constructability of Research Bridges

Jugesh informed the team that the design on the two research prestressed bridges was completed. John Quigg offered an existing bridge in Nisqually for the experiment. The Bridge needs to be demolished by next week. Due to timing, safety concerns, and environmental permitting, this may not be a feasible option.

Action Plan: No further action is necessary. Mo will inform the team of any future action on this topic.

Cold Weather Curing

Bob suggested to strike the last sentence of the second paragraph due to redundant language. No other modifications were discussed. Bob also suggested that we seek input from all the State Construction Engineers before implementation.

Action Plan: This Spec will be added to the amendments of the 2004 Std. Specifications in April.

Vibration Limits

Mo read written comments from two absent members. Charlie suggested deleting the 72 hours or more requirement. He says "is there really a problem after 3 days & 2000 psi?" Tobin wrote: "our general office consensus is that vibration monitoring is not something we want in the Specs at this time."

Other suggestions and concerns expressed:

- Delete " within 30' horizontal distance of the curing concrete"

- Charlie suggests adding "Monitoring devices shall be placed on or adjacent to the newly placed concrete when the measurements are taken"
- Change the 2000 min. compressive strength to 1400 psi
- Tobin is concerned with excessive vibration on bridge widening projects
- What does research show with respect to concrete damage due to vibration?
- Concrete test cylinders subjected to early mishandling have shown erratic test results
- This spec may cause problems with projects that require acceleration

Action Plan: Continuing discussion.

Presentation - Vibration Monitoring

Guest speakers Dr. Clyde Ringstad, Lynn Ringstad, and Mathew Ringstad of Apollo Geophysics Corp. gave a presentation on basics of vibration and vibration measurement. Some of the highlights:

- Dr. Ringstad is a pioneer in vibration monitoring. He has extensive background in monitoring vibration for mine blasts, earthquakes, and nuclear blasts.
- Lynn explained the basics of vibration, "P", "S", and surface waves
- Velocity measurements are generally monitored in three different axes, longitudinal, transverse, and vertical
- Site geology and resulting damping effects is extremely important
- Monitoring devices are, seismographs, geophones, crack gages, and data loggers
- Approx. cost of monitoring:

Preconstruction survey, digital monitoring	$500 - $1,000
Monitoring Plan	$500 - $1,000
Vibration Controls for piles, earthwork	$1,000 - $2,000
Alarm systems	$1,000/ week

Concluding remarks by Dr. Ringstad was that there is no information or data concerning impact of vibration on green concrete. Research in this area is needed.

The meeting adjourned at 12:00 PM

Next meeting is scheduled on March 12, 04